

Listing of Claims

IN THE CLAIMS:

The following listing of claims is intended to supercede all previously filed listings of claims. Changes are shown with deletions in ~~striketrough~~ and additions underlined.

Claim 1 (Currently Amended). A cable seal configured to seal a cable against fluid passage in an environment wherein a pressure differential exists between a first region of the environment and a second region of the environment, including:

a ~~bonding layer formed substantially directly on the cable~~ metal-plated optical fiber; and
a bonding agent disposed on the ~~bonding layer~~ metal-plated optical fiber and configured to seal a portion of the cable against passage of fluids.

Claim 2 (Cancelled).

Claim 3 (Currently Amended). The cable seal of claim 2, wherein the ~~metallized layer~~ includes optical fiber is plated with at least one of chromium, nickel and gold.

Claim 4 (Original). The cable seal of claim 1, wherein the bonding agent includes epoxy.

Claim 5 (Currently Amended). The cable seal of claim 4, wherein the epoxy is bonded to the ~~bonding layer~~ metal-plated optical fiber.

Claim 6 (Original). The cable seal of claim 1, wherein the cable includes a plurality of optical fibers.

Claim 7 (Original). The cable seal of claim 6, wherein the optical fibers are formed from silica.

Claim 8 (Currently Amended). The cable seal of claim 1, wherein the first region has a pressure lower than a pressure of the second region.

Claim 9 (Currently Amended). A method for forming a seal on a cable having a core material, including the steps of:

removing an amount of an overlayer on the core material sufficient to expose a surface to which a bonding layer may be applied;

~~applying a bonding layer to~~ plating the exposed surface with a metal to form a metal-plated surface;

applying a bonding agent to at least a portion of the ~~bonding agent~~ metal after the metal has been plated on to the exposed surface.

Claim 10 (Cancelled).

Claim 11 (Currently Amended). The method of claim 9, wherein the step of ~~applying a bonding layer~~ plating the exposed surface includes applying a layer including at least one of chromium, nickel and gold.

Claim 12 (Currently Amended). The method of claim 9, wherein the step of applying a bonding agent includes the step of applying epoxy to the ~~bonding layer~~ metal-plated surface.

Claim 13 (Currently Amended). The method of claim 9, wherein:
the cable includes a plurality of optical fibers, each having a silica core; and
the step of ~~applying a bonding layer~~ plating the exposed surface includes the step of ~~applying a metallized layer including~~ at least one of chromium, nickel and gold to each silica core in the cable.

Claim 14 (Currently Amended). The method of claim 13, wherein the step of applying a bonding agent includes the steps of:

placing a region of the cable in a mold; and
applying epoxy to the region for sufficient time to bond the epoxy to at least a portion of the metal-plated surface~~metallized layer~~.

Claim 15 (Currently Amended). An optical fiber cable, including:

a plurality of optical fibers each having a silica core, the cable having a first region wherein at least some of the optical fibers have substantially no coating, and having a third region wherein at least some of the optical fibers have a second coating;

a ~~bonding layer~~ metal-plating applied to at least a portion of the second region;

an epoxy seal bonded to the ~~bonding layer~~ metal plating of at least some of the optical fibers in the second region and extending partly into the first region and partly into the second region.

Claim 16 (Original). The optical fiber cable of claim 15, further including:

a first conductive tube surrounding at least a portion of the first region; a second conductive tube surrounding at least a portion of the third region; and

a conductive housing surrounding at least a portion of the second region, including the epoxy seal;

wherein the first conductive tube, second conductive tube and conductive housing form a continuous conductive path.

Claim 17 (Original). The optical fiber cable of claim 16, further including an insulating sleeve over each of the first conductive tube, second conductive tube and conductive housing.

Claim 18 (Original). The optical fiber cable of claim 17, wherein the insulating sleeve includes polyethylene.

Claim 19 (Currently Amended). A system for transmission of data between a first environment having a low relative pressure and a second environment having a high relative

pressure, including:

a communications cable including a plurality of optical fibers each having a silica core, the cable having a first region wherein at least some of the optical fibers ~~including~~ have a first coating, having a second region wherein at least some of the optical fibers have substantially no coating, and having a third region wherein at least some of the optical fibers have a second coating;

a ~~bonding layer~~ metal plating applied to at least a portion of the second region;

an epoxy seal bonded to the ~~bonding layer~~ metal plating of at least some of the optical fibers in the second region and extending partly into the first region and partly into the second region; and

at least one electronics module positioned within the first environment and coupled to a portion of the optical fibers in the first region.

Claim 20 (Original). The transmission system of claim 19, further including:

a first conductive tube surrounding at least a portion of the first region;

a second conductive tube surrounding at least a portion of the third region; and

a conductive housing surrounding at least a portion of the second region, including the epoxy seal;

wherein the first conductive tube, second conductive tube and conductive housing form a continuous conductive path.

Claim 21 (Currently Amended). The transmission system of claim ~~20~~19, further including a sleeve over each of the first conductive tube, second conductive tube and conductive housing.

Claim 22 (Currently Amended). The transmission system of claim ~~21~~19, wherein the sleeve includes polyethylene.

Claim 23 (New). The cable seal of claim 1, wherein a metal is applied to the optical fiber using chemical vapor deposition to produce the metal-plated optical fiber.

Claim 24 (New). The method of claim 9, wherein the step of plating the exposed surface with a metal to form a metal-plated surface includes plating the exposed surface using a chemical vapor deposition process.